



Unibraze 8018-C3 (E8018-C3)

DESCRIPTION:

UNIBRAZE 8018-C3 is an outstanding electrode that is designed for 80,000 tensile strength applications and also 1% nickel applications. This electrode provides excellent puddle control with good wetting action and tie in. The electrode offers good arc characteristics and easy slag removal. The UNIBRAZE 8018-C3 will provide notch toughness of 20 ft•lbs. at -40°F. The coating is specially formulated to resist conditions of high heat and humidity. The electrode offers resistance to moisture reabsorption, helps prevent hydrogen cracking and aids in eliminating starting porosity. Definitely a preferred electrode with high operator appeal.

APPLICATIONS:

UNIBRAZE 8018-C3 is designed for use on 80,000 tensile steels of both commercial and military applications.

FEATURES:

- Excellent arc characteristics
- Low spatter level
- Quick and easy slag removal
- Low moisture reabsorption
- Low smoke level
- Low hydrogen, less than 4 ml/100 g

BENEFITS:

- Stable, easy to control arc
- Improves weld bead appearance, higher deposition
- Reduces clean-up time
- Prevents starting porosity
- Welder safety and comfort
- Resistant to hydrogen-induced cracking

TYPICAL WELD METAL PROPERTIES (Chem Pad):

| Weld Metal Analysis | | AWS Spec |
|---------------------|-------|-------------|
| Carbon (C) | 0.05 | 0.12 max |
| Manganese (Mn) | 1.03 | 0.40 - 1.25 |
| Phosphorus (P) | 0.012 | 0.03 max |
| Sulphur (S) | 0.009 | 0.03 max |
| Silicon (Si) | 0.26 | 0.80 max |
| Chromium (Cr) | 0.07 | 0.15 max |
| Vanadium (V) | 0.02 | 0.05 max |
| Nickel (Ni) | 0.96 | 0.80 - 1.10 |
| Molybdenum (Mo) | 0.10 | 0.35 max |

TYPICAL MECHANICAL PROPERTIES:

| | | AWS Spec |
|--------------------|----------------------|---------------------|
| Tensile Strength | 82,000 psi (566 MPa) | 80,000 psi |
| Yield Strength | 70,000 psi (485 MPa) | 68,000 - 80,000 psi |
| Elongation % in 2" | 28% | 24% min |

TYPICAL CHARPY V-NOTCH IMPACT VALUES:

| | | AWS Spec |
|---------------|-----------|-----------|
| Avg. at -40°F | 95 ft•lbs | 20 ft•lbs |

CONFORMANCES AND APPROVALS:

- AWS A5.5, E8018-C3 H4, ASME SFA 5.5, F-4, A-10, E8018-C3 H4
- ABS
- MIL-E-22200/1 (1/8" and 5/32" diameters)

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its product.



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DIFFUSIBLE HYDROGEN: 2.2 ml/100 gr

RECOMMENDED WELDING PROCEDURES:

- GENERAL:** Electrode positive, work negative (DCEP) or AC
- ARC LENGTH:** Very short arc
- FLAT:** Angle electrode 10-15° from 90°
- VERTICAL-UP:** Use weaving techniques
- VERTICAL-DOWN:** Not recommended
- OVERHEAD:** Use slight weaving motion within the puddle
- STORAGE:** After opening, store in holding oven (220°F to 350°F) until used.
- RECONDITIONING:** If exposed to atmosphere for extended periods, reconditioned for one (1) hour at 600°F.

RECOMMENDED OPERATING PARAMETERS:

| Diameter | | Type of Power | Minimum Amps | Optimum* Amps | Maximum Amps |
|----------|-----|---------------|--------------|---------------|--------------|
| Inches | mm | | | | |
| 3/32 | 2.4 | DCEP or AC | 70 | 100 | 110 |
| 1/8 | 3.2 | DCEP or AC | 90 | 135 | 160 |
| 5/32 | 4.0 | DCEP or AC | 130 | 170 | 220 |
| 3/16 | 4.8 | DCEP or AC | 200 | 250 | 300 |
| 1/4 | 6.4 | DCEP or AC | 300 | 350 | 400 |

*For out of position welding, reduce amperages shown by 15%.

TYPICAL DEPOSITION RATES (at Optimum):

| Diameter | | Type of Power | Amperage | Deposition Rate Lbs/Hr. |
|----------|-----|---------------|----------|-------------------------|
| Inches | mm | | | |
| 3/32 | 2.4 | DCEP | 100 | 2.0 |
| 1/8 | 3.2 | DCEP | 135 | 2.9 |
| 5/32 | 4.0 | DCEP | 170 | 3.8 |
| 3/16 | 4.8 | DCEP | 250 | 5.9 |
| 1/4 | 6.4 | DCEP | 350 | 8.1 |

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